

THE INVENTION CLAIMED IS:

1. A method for fabricating a semiconductor heat spreader, comprising:
providing a unitary metallic plate; and
forming the unitary metallic plate into:

5 a panel;
channel walls depending from the panel to define a channel between the
channel walls and the panel for receiving a semiconductor therein;
at least two feet extending from respective channel walls for attachment to a
substrate; and
10 at least one external reversing bend.

2. The method of claim 1 wherein the feet are selected from an arched foot, a stand-off foot, a slotted stand-off foot, a toed foot, a stand-off toed foot, a flat foot, a slotted flat foot, a zigzag foot, a box foot, and a combination thereof.

3. The method of claim 1 further comprising forming the feet to accommodate
15 respective set volumes of adhesive therebeneath for attaching the semiconductor heat
spreader to a substrate.

4. The method of claim 1 further comprising forming an electromagnetic
interference shield for the channel.

5. The method of claim 1 further comprising:
20 providing an additional unitary metallic plate; and
 forming the additional unitary metallic plate into a unitary auxiliary heat spreader
 configured for attachment on top of the semiconductor heat spreader.

6. The method of claim 5 further comprising forming attachment means for
attaching the unitary auxiliary heat spreader to the semiconductor heat spreader, the
25 attachment means being selected from tabs, locking tabs, deformable sides, side ledges, side
clips, clip bosses, center clips, side arms, and a combination thereof.

7. The method of claim 1 wherein forming the unitary metallic plate further
comprises forming the unitary metallic plate in substantially a single metal forming process
to also form an integral auxiliary heat spreader located on top of the panel.

8. The method of claim 1 wherein forming the unitary metallic plate further comprises forming the unitary metallic plate in substantially a single metal forming process into a cross-sectional profile that is substantially constant in at least one horizontal direction.

9. A method for fabricating a semiconductor heat spreader, comprising:

5 providing a unitary metallic plate;

forming the unitary metallic plate in substantially a single metal forming process into:

a panel;

channel walls depending from opposite sides of the panel to define a channel between the channel walls and the panel for receiving a semiconductor 10 therein;

at least two feet extending from respective channel walls on opposite sides of the panel for attachment to a substrate, the feet being:

selected from an arched foot, a stand-off foot, a slotted stand-off foot, a 15 toed foot, a stand-off toed foot, a flat foot, a slotted flat foot, a zigzag foot, a box foot, and a combination thereof; and

formed to accommodate respective set volumes of adhesive therebeneath for attaching the semiconductor heat spreader to a 20 substrate;

a cross-sectional profile that is substantially constant in at least one horizontal 25 direction; and

at least one external reversing bend.

10. The method of claim 9 further comprising:

providing an additional unitary metallic plate;

forming the additional unitary metallic plate in substantially a single metal forming 25 process into a unitary auxiliary heat spreader configured for attachment on top of the semiconductor heat spreader; and

forming attachment means for attaching the unitary auxiliary heat spreader to the 30 semiconductor heat spreader, the attachment means being selected from tabs, locking tabs, deformable sides, side ledges, side clips, clip bosses, center clips, side arms, and a combination thereof.

11. A semiconductor heat spreader comprising a unitary metallic plate having:
a panel;

channel walls depending from the panel to define a semiconductor receiving channel
between the channel walls and the panel;

5 at least two feet extending from respective channel walls for attachment to a substrate;
and

at least one external reversing bend.

12. The semiconductor heat spreader of claim 11 wherein the feet are selected
from an arched foot, a stand-off foot, a slotted stand-off foot, a toed foot, a stand-off toed
10 foot, a flat foot, a slotted flat foot, a zigzag foot, a box foot, and a combination thereof.

13. The semiconductor heat spreader of claim 11 wherein the feet are formed to
accommodate respective set volumes of adhesive therebeneath for attaching the
semiconductor heat spreader to a substrate.

14. The semiconductor heat spreader of claim 11 further comprising an
15 electromagnetic interference shield for the channel.

15. The semiconductor heat spreader of claim 11 further comprising an additional
unitary metallic plate configured as a unitary auxiliary heat spreader for attachment on top of
the semiconductor heat spreader.

16. The semiconductor heat spreader of claim 15 further comprising attachment
20 means for attaching the unitary auxiliary heat spreader to the semiconductor heat spreader,
the attachment means being selected from tabs, locking tabs, deformable sides, side ledges,
side clips, clip bosses, center clips, side arms, and a combination thereof.

17. The semiconductor heat spreader of claim 11 further comprising an integral
auxiliary heat spreader formed from the unitary metallic plate, located on top of the panel,
25 and having the physical characteristics of being formed in a unitary metal forming process.

18. The semiconductor heat spreader of claim 11 wherein the unitary metallic
plate has the physical characteristics of being formed in a unitary metal forming process and
a cross-sectional profile that is substantially constant in at least one horizontal direction.

19. A semiconductor heat spreader comprising a unitary metallic plate having:
a panel;

channel walls depending from opposite sides of the panel to define a semiconductor
receiving channel between the channel walls and the panel;

5 at least two feet extending from respective channel walls on opposite sides of the
panel for attachment to a substrate, the feet being:

selected from an arched foot, a stand-off foot, a slotted stand-off foot, a toed
foot, a stand-off toed foot, a flat foot, a slotted flat foot, a zigzag foot, a
box foot, and a combination thereof; and

10 formed to accommodate respective set volumes of adhesive therebeneath for
attaching the semiconductor heat spreader to a substrate;

a cross-sectional profile that is substantially constant in at least one horizontal
direction;

the physical characteristics of being formed in a unitary metal forming process; and
15 at least one external reversing bend.

20. The semiconductor heat spreader of claim 19 further comprising:

an additional unitary metallic plate configured as a unitary auxiliary heat spreader for
attachment on top of the semiconductor heat spreader and having the physical
characteristics of being formed in a unitary metal forming process; and

20 attachment means for attaching the unitary auxiliary heat spreader to the
semiconductor heat spreader, the attachment means being selected from tabs,
locking tabs, deformable sides, side ledges, side clips, clip bosses, center clips,
side arms, and a combination thereof.

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